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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,541	12/20/2001	Takayuki Araki	W-2382	4040

466 7590 09/29/2004

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EXAMINER

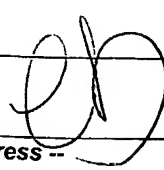
AHMED, SHEEBA

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/022,541	Applicant(s) ARAKI ET AL.	
	Examiner Sheeba Ahmed	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 16, 2004 has been entered.

Response to Amendments

2. Amendments to claim 1 have been entered in the above-identified application. New claims 13-20 have been added.

Election/Restrictions

3. Newly submitted claims 13-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Original claims 1-12 are directed to a an internal electrode of a multilayer ceramic capacitor whereas claims 13-20 are directed to a method of controlling a rate of heat shrinkage during manufacture of an internal electrode of a multilayer ceramic capacitor.

The inventions of claims 1-12 and the invention of claims 13-20 are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be

practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the claimed internal electrode can be used for a process other than controlling the rate of heat shrinkage during manufacture.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13-20 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4, 5, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagohashi et al. (US 6,168,752) in view of Komagata et al. (US 5,714,238).

Kagohashi et al. disclose that conductive metallic powders are used in the manufacture of multilayer ceramic capacitors and nickel powders are particularly referred for such a use. Internal electrodes are required to be thin and hence ultrafine metal powders having diameters of 1 micron or less are used (Column 1, lines 14-23).

Kagohashi et al. do not specifically teach that the nickel powders used to make the internal electrodes of the ceramic capacitors are surface modified with a phosphate compound, a phosphite compound or a hypophosphite compound in an amount ranging from 0.01 to 1% by weight.

However, Komagata et al. disclose a conductive adhesive paste comprising conductive particles of nickel or nickel alloy surface treated with a phosphate derivative such as a phosphoric acid ester. The surface treatment is applied to the nickel particles in order to prevent increasing a relative resistivity (specific resistance) by oxidation of the metal particles at a high temperature (Column 1, lines 66-67, Column 2, lines 1-6 and Column 3, lines 21-28). The amount of the surface treating agent is 0.1 to 5% by weight based on the total weight of the metal particles to be supplied the surface treatment (Column 4, lines 60-67).

Accordingly, it would have been obvious to one having ordinary skill in the art to add a phosphate acid ester surface treatment to the surface of the nickel powders taught by Kagohashi et al. given that Komagata et al. specifically teach that doing so prevents an increase in the relative resistivity (specific resistance) of the metal particles at a high temperature. With regards to the limitation that the amount of the phosphate, phosphite or hypophosphite compounds is selected to improve resistance to heat shrinkage during manufacture, the Examiner takes the position that such a limitation is inherent in the surface treatment taught by Komagata et al. given that the amount taught by Komagata et al. and that used in the instantly claimed invention is identical.

5. Claims 3, 6, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagohashi et al. (US 6,168,752) in view of Komagata et al. (US 5,714,238) and Iri et al. (US 5,272,223).

Kagohashi et al. and Komagata et al., as discussed above, do not teach that the phosphate, phosphite or hypophosphite compound is in the form of a titanate coupling agent.

However, Iri et al. disclose surface treated metal powders (See Abstract) wherein the addition of a coupling agent to the composite metal particles can further improve properties such as adhesion, water resistance, chipping resistance. Examples of such coupling agents include titanate-coupling agents (Column 10, lines 20-29).

Accordingly, it would have been obvious to one having ordinary skill in the art to add a titanate coupling agent to the surface treatment of the nickel powders taught by Kagohashi et al. given that Iri et al. specifically teach that doing so can further improve properties such as adhesion, water resistance, chipping resistance.

Response to Arguments

6. Applicant's arguments filed on August 16, 2004 have been fully considered but they are not persuasive. Applicants traverse the rejection of claims 1, 2, 4, 5, 7, 8, 10, and 11 under 35 U.S.C. 103(a) as being unpatentable over Kagohashi et al. (US 6,168,752) in view of Komagata et al. (US 5,714,238) and submit that Komagata et al. do not teach the use of the phosphate, phosphite or hypophosphite compounds to improve resistance to heat shrinkage during capacitor manufacture. However, the

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Examiner taken the position that such a limitation is inherent in the surface treatment taught by Komagata et al. given that the amount taught by Komagata et al. and that used in the instantly claimed invention is identical.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Mondays and Thursdays from 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571)272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sheeba Ahmed

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September 26, 2004